

To: 'Olsen, Roger'[OlsenRL@cdm.com]; Harwood, Valerie[vharwood@cas.usf.edu];
Cc: Tamzen Macbeth[tmacbeth@northwind-inc.com];
Subject: sample collection description
Sent: Mon 12/31/2007 8:11:16 PM
From: Jennifer Weidhaas

Roger and Jody,

Do either of you have a write up describing the sample collection methods used for the poultry litter project? I am working, on my own time, on a journal manuscript detailing the identification and validation of our biomarker and would like to include the sample collection and handling methods. Additionally, a write up regarding the homogenization and subsampling of the two original soil and two litter samples would be helpful as well.

Cheers,

Jennifer

Jennifer Weidhaas, Ph.D., P.E.

Environmental Engineer

North Wind, Inc.

TEL: 208-557-7883

FAX: 208-528-8714

To: Jennifer Weidhaas[/O=NORTHWIND/OU=FIRST ADMINISTRATIVE GROUP/CN=RECIPIENTS/CN=JWEIDHAAS]; Olsen, Roger[OlsenRL@cdm.com]; Tamzen Macbeth[/O=NORTHWIND/OU=FIRST ADMINISTRATIVE GROUP/CN=RECIPIENTS/CN=TMACBETH];
Subject: RE: revised abstract
Sent: Mon 1/7/2008 8:34:22 PM
From: Harwood, Valerie

Beautiful.

Valerie J.(Jody) Harwood, Ph.D.

Department of Biology, SCA 110

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From: Jennifer Weidhaas [mailto:jweidhaas@northwind-inc.com]
Sent: Monday, January 07, 2008 3:34 PM
To: Harwood, Valerie; Olsen, Roger; Tamzen Macbeth
Subject: RE: revised abstract

All,

A few revisions for clarity. I can submit the final abstract on Wednesday when we are in agreement on the language.

Cheers,

Jennifer

From: Harwood, Valerie [mailto:vharwood@cas.usf.edu]
Sent: Monday, January 07, 2008 1:05 PM
To: Olsen, Roger; Tamzen Macbeth; Jennifer Weidhaas
Subject: revised abstract

Hi Jennifer, Tamzen and Roger –

Roger and I discussed the best way to write the environmental sampling part of the abstract, and think that one with less detail is more likely to be approved for submission. So I've made the changes as noted. Let me know what you think. Once we have all agreed on the final form I can send it to David Page.

Jody

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To: David Page[DPage@edbelllaw.com]; Olsen, Roger[OlsenRL@cdm.com];
Cc: Jennifer Weidhaas[/O=NORTHWIND/OU=FIRST ADMINISTRATIVE
GROUP/CN=RECIPIENTS/CN=JWEIDHAAS]; Tamzen Macbeth[/O=NORTHWIND/OU=FIRST
ADMINISTRATIVE GROUP/CN=RECIPIENTS/CN=TMACBETH];
Subject: abstract for approval
Sent: Mon 1/7/2008 10:56:15 PM
From: Harwood, Valerie

[Macbeth_ASM abstract 2008_JLW.doc](#)

Here is the abstract as it now stands. David is WORKING ON permission.

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Identification and Validation of a Novel Poultry Litter Biomarker for Tracking Fecal Pollution

T.W. Macbeth¹, J.L. Weidhaas¹, R.L. Olsen², K.S. Sorenson², and V.J. Harwood³

¹North Wind Inc, Idaho Falls, ID, ²CDM, Denver, CO, ³Univ. South Florida, Tampa, FL

The objective of this research was to develop a molecular biomarker specific to poultry litter and useful for tracking fecal pollution in a watershed affected by large-scale poultry farms. The 16S rRNA gene was targeted and community profiling conducted using terminal restriction fragment length polymorphism and clone library analysis to determine predominant populations in poultry litter that were conserved in soils to which litter had been applied. After screening numerous DNA sequences, a *Brevibacterium* spp., was selected for detailed evaluation. Polymerase chain reaction (PCR) primers specific to the *Brevibacterium* spp. were developed and tested against the original soil and litter samples, against closely related organisms identified in a BLAST database search, and against fecal samples from 32 other sources within and outside the watershed including beef cattle, dairy cattle, duck, goose, swine and human. The PCR primers amplified *Brevibacterium* spp. in all of the original soil and litter samples, and did not amplify closely related *Brevibacteria* identified in a BLAST search [DQ337537], or other fecal sources, except weakly in one goose and one duck sample that originated from outside the watershed.

Following validation of specificity of the *Brevibacterium* spp. biomarker, quantitative PCR (qPCR) with SYBR Green chemistry was developed. To date, more than 600 environmental samples have been collected within and outside the affected watershed for analysis. These include litter samples from 10 poultry farms, each of which contained high concentrations of the biomarker. In addition soil samples, runoff samples from the fields to which litter was applied, and river and lake waters from within the poultry litter impacted watershed were collected. The biomarker was found in each environmental sample type tested. This research successfully identified a novel biomarker for poultry litter that is highly specific relative to other fecal sources within the watershed, and presents evidence of the distribution of the biomarker to multiple surface water bodies as an indicator of fecal pollution.

To: Harwood, Valerie[vharwood@cas.usf.edu]; David Page[DPage@edbelllaw.com]; Jennifer Weidhaas[/O=NORTHWIND/OU=FIRST ADMINISTRATIVE GROUP/CN=RECIPIENTS/CN=JWEIDHAAS];
Cc: Tamzen Macbeth[/O=NORTHWIND/OU=FIRST ADMINISTRATIVE GROUP/CN=RECIPIENTS/CN=TMACBETH];
Subject: RE: Newest Abstract version
Sent: Wed 1/9/2008 8:56:26 PM
From: Olsen, Roger

I would use the phrase "poultry integrators" vs "poultry companies" - I think this identifies the companies more clearly??

From: Harwood, Valerie [mailto:vharwood@cas.usf.edu]
Sent: Wednesday, January 09, 2008 1:38 PM
To: David Page; Jennifer Weidhaas
Cc: Tamzen Macbeth; Olsen, Roger
Subject: RE: Newest Abstract version

THANKS!! Good news.

Valerie J.(Jody) Harwood, Ph.D.

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From: David Page [mailto:DPage@edbelllaw.com]
Sent: Wednesday, January 09, 2008 3:36 PM
To: Jennifer Weidhaas
Cc: Tamzen Macbeth; Olsen, Roger; Harwood, Valerie
Subject: RE: Newest Abstract version

The most recent Abstract (attached) with the predicate set forth below has been approved. Thanks, David.



David P. Page, Esquire

P.O. Box 1769

Tulsa, Oklahoma 74101-1769

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From: Jennifer Weidhaas [mailto:jweidhaas@northwind-inc.com]
Sent: Tuesday, January 08, 2008 2:53 PM
To: David Page
Cc: Tamzen Macbeth; Olsen, Roger; Harwood, Valerie
Subject: RE: Newest Abstract version

David,

If the following statement was added to the end of the abstract that Jody sent out this morning would that satisfy your requirements?

"This research was funded by the State of Oklahoma in on-going litigation against poultry companies."

Jennifer

From: Harwood, Valerie [mailto:vharwood@cas.usf.edu]
Sent: Tuesday, January 08, 2008 11:29 AM
To: David Page; Tamzen Macbeth; Jennifer Weidhaas; Olsen, Roger
Subject: RE: Newest Abstract version

No, I don't see a problem w/it.

Valerie J.(Jody) Harwood, Ph.D.

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From: David Page [mailto:DPage@edbelllaw.com]
Sent: Tuesday, January 08, 2008 12:27 PM
To: Harwood, Valerie; Tamzen Macbeth; Jennifer Weidhaas; Olsen, Roger
Subject: RE: Newest Abstract version

The co counsel believe that you need to be explicit about the fact that this work was done to support a case by the State of OK against poultry companies so that there will be no future accusations that the "motives" for the work were not disclosed. Any problems with this?



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From: Harwood, Valerie [mailto:vharwood@cas.usf.edu]
Sent: Tuesday, January 08, 2008 6:43 AM
To: David Page; Tamzen Macbeth; Jennifer Weidhaas; Olsen, Roger
Subject: Newest Abstract version
Importance: High

Hi all – after speaking w/Roger, I have made a few more revisions to the abstract (also found a couple of little things in the first section to change). The environmental sampling has few details on purpose, since we will be analyzing more samples before the poster is written up. Unless anyone has concerns or comments, this will be the last version. It is my understanding that we are still waiting for explicit permission to submit from David – correct (Roger or David?).

Jody

Valerie J. (Jody) Harwood

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